Genoa National Fish Hatchery News and Notes

About Genoa NFH

Genoa NFH was established over 80 years ago by the Upper Mississippi River Fish and Wildlife Act. The mission of the hatchery has changed from providing sport fish for area waters to a conservation hatchery concerned with the recovery of endangered aquatic species.

The hatchery is open for tours during business hours. For large groups, please call for an appointment. You can reach the hatchery at 608-689-2605 from 7:30 am to 3:30 pm. You can also find us online at: fws.gov/midwest/genoa

And on Facebook at: facebook.com/GenoaNFH

Promoting Monarch Conservation Through School Partnerships

The US Fish and Wildlife Service considers the monarch butterfly a flagship species and has made monarch conservation a national priority. The Genoa National Fish Hatchery is working to create and enhance existing habitats for monarchs by planting milkweed and other nectar plants on 75 acres of hatchery property. Last fall milkweed seeds were removed from pods at the hatchery and planted this spring by hatchery staff. Increasing essential habitat will promote the health of both larvae and adult monarch butterflies. Once seeds are planted the second step has been engaging people in monarch conservation through community involvement and school partnerships. Staff members from Genoa visit local schools for in class lessons on monarch butterfly conservation. Teachers from Summit Enviornmental School and Southern Bluffs Elementary (La Crosse, WI) have also incorporated monarch butterfly conservation into their science curriculum at school. These lessons are on monarch butterfly life history and habitat enhancement and focus on the role students can play in monarch conservation both at school and at home. During the fall of 2015 students helped hatchery staff remove seeds from milkweed pods as part of a hands on in class lesson. The majority of the seeds were planted on hatchery grounds and a portion remained in the classroom. Students and teachers worked together and planted individual seeds in recycled milk cartons and grew the plants in the classroom under heat lamps. Once the plants were between 4-6 inches they were transported to the hatchery where students spent the day planting and enhancing habitat on hatchery grounds as part of the Genoa Fish Hatchery Outdoor Classroom. In the future hatchery staff plans on providing guidance on increasing school yard habitats for monarch butterflies. Through these school partnerships hatchery staff are looking forward to growing the next generation of monarch butterfly conservationists.

By: Orey Eckes

Students from Summit Environmental School plant milkweed in Genoa's monarch habitat.

Region 3 Dive Team Holds Annual Meeting and Skills Refresher

On March 23rd and 24th the US Fish and Wildlife Service Region 3 dive team met in Moline, IL to hold their annual meeting and dive skills refresher. Successful completion of an annual swim test and dive skills refresher are among the requirements for active status on the regional dive team. The meeting was attended by divers from the regional office in Bloomington, Minnesota; the Columbia and Rock Island ES field offices and the Genoa National Fish Hatchery. The meeting began with discussions about dive experience, certifications and safety protocols. The first day of the meeting ended with a pool session to fulfill the annual swim test requirements. The swim test is made up of a 400M freestyle, 800M snorkel with fins and a 15 minute water tread. The dive skills refresher was held the following morning with team members practicing basic dive skills such as buoyancy control, mask retrieval and underwater gear replacement. An exercise followed on low visibility navigation before the session ended. After completion of these exercises I was fully authorized to continue dive activities for 2016. The next step for the Genoa NFH dive team will be to get new station diver Megan Bradley fully certified prior to the beginning of the busy field season.

By: Nathan Eckert

Nathan practicing dive skills in the pool.

Genoa National Fish Hatchery's mission is to recover, restore, maintain and enhance fish and aquatic resources on a basin-wide and national level by producing over 35 aquatic species of varying life stages, participating in active conservation efforts with our partners, and becoming a positive force in the community by educating future generations on the benefits of conservation stewardship

Regional Dive Officer Andy Roberts practices navigation with a covered mask to simulate low visibility.

Spring Loaded! Kalamazoo River Streamside Rearing Unit Deployed

Every spring, spawning adult lake sturgeon make their way back to the streams where they were hatched to create the next year class of lake sturgeon, ultimately continuing their species. In what is also now an annual rite of spring, 3 members of the Genoa staff traveled to Allegan Michigan to set up the electrical, plumbing and backup life support systems for the mobile rearing station situated on the Kalamazoo River. The station pumps filtered and sterilized river water into the culture tanks, creating culture conditions that are closer to the lake sturgeon's optimal environmental temperature and water chemistry. This ensures the best survival for the incoming eggs and fry that are trapped directly out of the Kalamazoo River. The Fish and Wildlife Service's Genoa hatchery and Green Bay Fish and Wildlife Conservation Office partner with the Michigan Department of Natural Resources, Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan and Kalamazoo River branch of Sturgeon for Tomorrow to set and collect egg traps and larval drift nets to fill up the trailer with river specific origin lake sturgeon from the Kalamazoo River. These fry are reared on river water to allow them to imprint to the river's unique water chemistry in order to be able to find its way home up to 22 years later when the sturgeon is reproductively mature. Then it will do its best to replace itself at least once by successfully completing the spawning cycle. The juvenile lake sturgeon will be reared until 8-10 inches in length, and released in early September, when the water temperatures have begun cooling and the fish is large enough to escape most predators. Genoa will have one staff person stationed at the trailer until then, caring for the larval lake sturgeon and ensuring that trailer systems remain operational. So far, a total of over 200 viable eggs have been brought into the facility, and we are hopeful that a large portion of those eggs will survive to complete their circle of life starting in the Kalamazoo River.

By: Doug Aloisi

Kalamazoo trailer ready to travel.

Trailer deployed.

Lake Sturgeon eggs arrive at Genoa

Lake surgeon season has begun and Genoa! Over the past few weeks staff from Genoa has been travelling to various locations to collect and spawn lake sturgeon eggs from Shawano Dam, near Green Bay, Wisconsin Dells Dam and on the Rainy River at the First Nations Tribe Reservation in Ontario Canada. Ripe female eggs were collected into a stainless dish where they were then fertilized by the males. Once collected the eggs are distributed into 3 or 4 separate buckets were active sperm from 3 or 4 males are added. Using more than 1 male at a time will help ensure genetic diversity. Once blended a mixture of bentonite clay and well water are added and stirred for 30 minutes. This clay mixture is used to prevent eggs from clumping and sticking together. After the clay bath the fertilized eggs are disinfected using an iodine solution and returned to the hatchery. Upon arriving at the hatchery, an inventory is taken and eggs are put into egg jars where they are treated and turned until they hatch. Sturgeon "babies", also known as fry, are initially fed a diet of brine shrimp. As they grow they are moved onto a krill and bloodworm diet. Once the fry have grown to a couple inches they are tagged and prepped for distribution. Sturgeon are tagged using a small coded metallic wire with each strain assigned its own code. These tags help to identify where the sturgeon was reared when caught for future surveys. Once all sturgeon has been tagged, staff will travel with the sturgeon to their new homes. Sturgeons are stocked into various rivers and streams in efforts to restore and maintain populations. For the start of the 2016 lake sturgeon season Genoa is currently hatching approximately 130,500 eggs. Stay tuned for summer updates and send offs in the fall!

By: Erin Johnson

Collecting sperm out of a male lake sturgeon from the Shawano Dam.

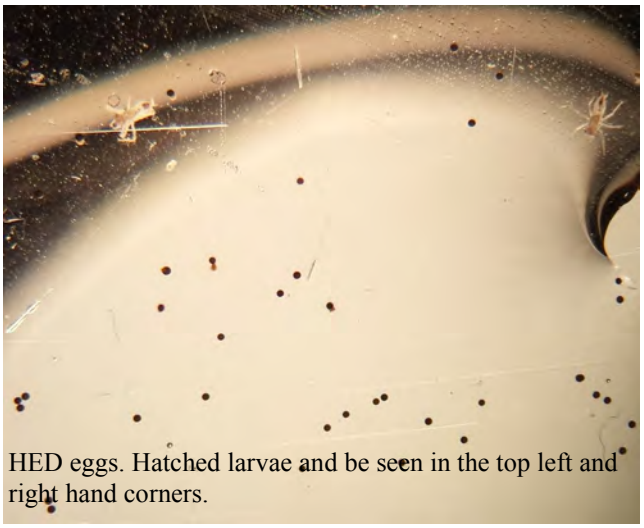
Collecting eggs out a female lake sturgeon from the Shawano Dam.

Blending fertilized eggs in a bentonite clay mixture.

First lake sturgeon fry of 2016!

Hatching a Plan!

Soon after their arrival on station at Genoa National Fish Hatchery, the Hine's emerald dragonfly eggs began hatching. The larvae were then placed in buckets with pond water to allow them to feed on zooplankton. The original plan was to place all the larvae into tanks in the newly constructed trailer, but difficulties with the tank construction contract prolonged the delivery date and they did not arrive on station until the end of April, 4 weeks after the hatching began. Despite the setback, construction of the trailer continued and it was set up near the pump station, connected to the pond pump that is also used to feed the mussel culture building. Having access to pond water allows the hatchery to raise the dragonfly larvae and native mussels on more natural and a better variety of food sources, rather than the nutrient poor well water that would require adding food. This increased variety will hopefully give the larvae better nutrients and more natural foraging conditions, allowing them to grow well and move out to the ponds within a couple months.



HED eggs. Hatched larvae and be seen in the top left and right hand corners.

The hatchery staff are learning quickly just how complicated the life cycle is for the Hine's emerald dragonfly, a difference in development stages for the eggs (some were starting to show the eye spots) led to the eggs being placed in the cooler quickly in the fall to prevent an early hatch. The flip side to the early placement in the cooler was that the under-developed eggs were held back slightly, resulting in slower development this spring. They quickly got back on track this spring after warming up, and eye spots were visible within 1-2 weeks of their arrival on station. This indication reassured staff the eggs were viable and they began hatching later in the month. The eggs collected last summer were divided between the University of South Dakota and Genoa NFH for several reasons, the first of which is the actual saying "Don't put all your eggs in one basket"! With the complicated life cycle, human intervention and the ever present "Murphy's Law" at play with any captive rearing site, having the eggs at two sites allows everyone to breathe a little easier. The additional reason is the number of eggs; USD is looking to pair down their time intensive rearing program and begin focusing on other research for the Hine's, so having half of the eggs come to the hatchery takes some of the workload off the university and allows the hatchery to begin learning how best to care for the dragonfly on a larger production scale. This situation also allows for comparisons between the two locations with the rearing programs, one observation already this spring is that both locations are experiencing the delayed and prolonged hatch of the larvae, letting us know that it is not a situational result.

New tanks set up in HED rearing trailer.

While the larvae have been growing well and feeding in the buckets, now that the tanks have finally arrived hatchery staff are making the screens and standpipes so they can all be moved to their new homes in the tanks in a couple weeks.

By: Angela Baran

Back on the Mississippi

Warming weather in the spring triggered staff at Genoa National Fish Hatchery to deploy walleye nets in an annual effort to collect walleye and sauger eggs for the upcoming production year. Roughly 50 hoop nets were set in late March to begin collecting ripe females. It did not take long to determine the staff had set nets just in time as walleyes were beginning to spawn. Generally the staff spawns walleye across an approximate three week period in early to mid-April as female walleye begin to ripen and eggs begin to flow. Usually there is no waiting for the male walleye to get ready as they are eager and willing. Spring rains and snow melt helped the staff this year collect walleyes as the increased flow pushed walleye closer to the river banks where nets were set. This was a welcome relief after last year's low water made it difficult to find the fish. Water temperature was a different story however, instead of a gradual increase, the water temps fluctuated up and down and triggered spawning ready females to turn on and off and made it slow for females being held to ripen up and release eggs. This can present a difficult challenge as unripe females are being held; male walleyes can "dry up" toward the end of the season meaning less milt is produced making it difficult to fertilize eggs that are collected later in the season. A daily trip usually consisted of getting on the river right away and lifting nets. It takes staff about 3-4 hours depending on weather conditions to hoist all 50 nets and check them for walleye and clear by catch. The most exciting part of a day of walleye spawning can be when an unusual species shows up in the nets. This year staff caught a female lake sturgeon that weighed an estimated 60+ pounds. By catch mostly consists of yellow perch, white bass, and freshwater drum so seeing a big lake sturgeon was a bit of a surprise for staff members. Once all the nets were checked, staff headed to the live box to check females being held there to determine if they were ripe and ripe females collected that day were spawned. Eggs were stripped from females into a stainless dish and once completed the females were immediately released back into the river. Males are then used to fertilize the eggs. Well water is then used to activate the sperm and stirred for one to two minutes. A mixture of bentonite clay and well water is then added to the bucket to ensure that eggs to do no clump and stick together, this could result in suffocation of the eggs. After two minutes in the clay mixture eggs are then rinsed with well water and placed into a larger bucket containing an iodine mixture to ensure they are disinfected before returning the hatchery. Once at the hatchery eggs are rinsed of the disinfectant and placed into hatching jars. The following day, after the eggs have water hardened, they are then enumerated to determine how many eggs were collected. This process is repeated each day during the spawn until wild fish have completed spawning at which point the nets are collected and returned to the hatchery to be mended and repaired and used again the next year. All said and done just shy of 600 walleyes were spawned with almost 200 of them being females. Approximately 25 million eggs were collected this year, with good spawning success staff was able to ship excess eggs to state and tribal partners while still meeting the stations production requests for stocking and future freshwater mussel hosts and allowing for over 2.2 million hatched fry to be returned to the Mississippi River. Walleye are the host fish for the black sandshell mussel, an endangered species or a species of concern for several states. In an effort to supplement existing populations or re-introduce black sandshell mussels to various state waters, the walleye are a key species at Genoa NFH.

By: Aaron Von Eschen and Jeff Lockington

A female lake sturgeon collected during walleye spawning

Photo credit: TJ Turner

Upcoming calendar of events

June 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4 Friends of Pool 8 River Clean Up
5	6	7 Heavy equipment training, Savanna, IL	8 Westby Day Care Tour	9	10	11
12	13 Bangor HS Tour	14	15 UTV Training	16	17	18 De Soto Lions Club Event
19 Father's Day	20	21 Angie-China Trip Presentation, Regional Office	22 Interstate peer exchange meeting with state DoT Environmental professionals	23	24	25
26	27	28 Sugar River Senior Center-Tour	29	30		